REMARKS

A. Request for Reconsideration

Applicants have carefully considered the matters raised by the Examiner in the outstanding Office Action dated July 24, 2009 but remain of the position that patentable subject matter is present. Applicants respectfully request reconsideration of the Examiner's position based on the following remarks.

B. Claim Status

Claims 12-17 and 22-31 are pending in this Application. As understood by the Examiner, Claim 12 reads on zero or no plasticizer in the composition.

C. Present Invention

The display substrates used on Liquid Crystal displays are often subject to high temperature, page 2, lines 5 and 10, of the Application, and many plastic substrates crack under thermal treatments, page 3, line 9. Cellulose esters have the disadvantage of having a high moisture absorbing property, which is typically controlled with the addition of 5-20 wt. % of plasticizer. Plasticizer, however, can have deleterious effects, page 5, line 3, of the Application.

Applicants discovered that a cellulose ester film can be used as a substrate if the amount of plasticizer is kept below 1 wt. % and the film is subject to biaxial stretch, page 5, lines 5-11. In fact, one of the unique aspects of the present Invention is that the display substrate maintains a low moisture permeability after thermal shock, heat treatment. This aspect of the present Invention is shown in the data in Tables 1 and 2 on page 104 and 110 of the Application. For example, Substrate Film 101 and 119 were made of the same composition, but film 101 was drawn 10% in both MD and TD direction, while film 119 was not drawn, see Table 1, page 104. These two films were made into transparent conductive film and labeled 201 and 219, respectively. These two conductive films were tested for moisture permeability after thermal shock and the results are reported in Table 2, page 110. Film 219 had an increase of moisture permeability on the order of 5 (0.48 to 2.48) while Film 201 had an increase of only 2 (0.47 to 1.00).

Respectfully, the cited references taken alone or in combination fail to teach or suggest a display substrate with low moisture permeability after thermal shock and, thus, the claims are patentable over the cited references.

D. Prior Art Rejection

The Examiner made the following three prior art rejections:

(1) Claims 12-17, 22-23, 25-29 and 31 are rejected as being unpatentable over Yamada (US 2002/0123209) in view of Machell (US 5,219,510) as evidenced by Sobrinho;

(2) Claim 24 is rejected as being unpatentable over Yamada in view of Machell as evidenced by Sobrinho, and further in view of Kakinuma (US 5,840,465); and

(3) Claim 30 is rejected as being unpatentable over Yamada in view of Machell as evidenced by Sobrinho, and further in view of Ota (US 6,866,949).

The Examiner cites Yamada as teaching a display substrate wherein a moisture proof film that comprises a metal oxide or metal nitride on at least one of its surfaces, a cellulose acetate and no plasticizer. The Examiner notes that "zero plasticizer" brings the Yamada film within the range of "less than 1 percent" plasticizer of claim 12. The Examiner also states that Yamada teaches that the Yamada transparent film is "drawn 6 percent (factor of 1.06, [0110] in a lateral direction

(transverse, [0110], "however, this is not within the claimed range of 3 through 100 percent because, as the Examiner recognizes, Yamada only draws in the lateral direction while the claims require both conveyance and lateral direction."

The Examiner cites Machell at Col. 10, lines 5-17 as stretching a transparent film containing cellulose ester from 50 to 100 percent. This is for the purpose of providing superior surface properties (Col. 10, lines 29-45).

The Examiner cites Sobrinho as teaching that surface smoothness of a display substrate is critical for smooth deposition of a metal oxide or metal nitride and for improved moisture barrier properties. The Examiner reasons that it would have been obvious,

> to have drawn the transparent film containing cellulose ester of Yamada in both the conveyance direction and the lateral direction, in order to increase the surface smoothness of the film, as taught by Machell, so as to obtain the desired improvement in moisture barrier properties, as taught by Sobrinho.

Neither Yamada, Machell, nor Sobrinho teach or suggest that their products or the methods for making their product will result in a product having low moisture permeability after thermal shock. Thus, one of skill in the art, when reading

Yamada, Machell and Sobrinho, is not lead to the conclusion that if one were to combine their teachings, that one can arrive at a display substrate with low moisture permeability after thermal shock.

Table 2, page 110 of the Application, teaches that Films 201 and 219 each had good initial moisture permeability, both had initial moisture permeability of 0.47 and 0.48, respectively. However, after thermal shock treatment, Film 219 had a moisture permeability five (5) times larger, 2.48, while Film 201 had a moisture permeability of two (2) times larger, 1.00. Film 201 was drawn in both conveyance and lateral direction by 10%, while Film 219 was not drawn in either direction.

Thus, it is submitted that even if Yamada, Machell and Sobrinho teach good initial moisture permeability, one of skill in the art would not predict that a film with low moisture permeability after thermal shock could be obtained from their teachings. Nothing in Yamada, Machell or Sobrinho lead one of skill in the art to predict that a combination of the references would result in a film having good moisture permeability after thermal shock. Thus, one of skill in the art could not predict

that a combination of the references would result in a substrate with low moisture permeability after thermal shock.

Kakinuma had been cited to teach an organic crosslinking agent comprising isocyanate in certain ranges, and Ota to teach a film with a glass-transition temperature of 180°C or more or coefficients of linear expansion in the MD and TD directions of from 5 through 50 ppm/°C.

Neither Kakinuma nor Ota alone or in combination with Yamada, Machell and Sobrinho, would allow one of skill in the art to predict that a cellulose ester film with less than 1% plasticizer and having a biaxial draw of 3-100% would yield a substrate having low moisture permeability after thermal shock.

Respectfully, the claims are patentable over the references taken alone or in combination.

D. Conclusion

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance and such action is respectfully requested. Should any additional fees or extensions of time be necessary in order to maintain this Application in

pending condition, appropriate requests are hereby made and authorization is given to debit Account No. 02-2275.

Respectfully submitted,

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